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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/536,745

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EXAMINER

JORDAN, KIMBERLY L

ART UNIT

PAPER NUMBER

2193

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/536,745	Applicant(s) BENTZ ET AL.	
	Examiner Kimberly Jordan	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-11, 13-17 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11, 13-17, and 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is in response to the amendment filed on February 2, 2009.
2. **Claims 1-5, 7-11, 13-17, and 19-21** are pending and have been examined.
3. **Claims 1-5, 7-11, and 13-17** have been amended.
4. **Claims 19-21** have been added.
5. **Claims 6, 12, and 18** have been cancelled.
6. The objections Claims 2, 7, 8, and 14 are withdrawn in view of Applicant's amendments to the claims.
7. The 35 U.S.C. § 112 rejections of Claims 1 and 7-12 are withdrawn in view of Applicant's amendments.
8. The 35 U.S.C. § 101 rejections of Claims 7-18 are withdrawn in view of Applicant's amendments.

Response to Amendment

Specification

9. The disclosure is objected to because of the following informalities: Claims 13-17 and 21 are drawn to a computer-readable medium. However, there is no support for this in the specification. There appears to be support for a "storage medium" (see paragraphs 0030 and 0031).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. **Claims 1-5, 7-11, 13-17 and 19-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baentsch et al. (WO 99/49392)**, hereinafter **Baentsch**, in view of **Swetland (US 2002/0170047 A1)**.

As per **Claim 1**, **Baentsch** discloses:

- *a fixup table for providing information to the Java Virtual Machine for resolving at least one entry in the given generated file at link time* (see at least Figures 1-3; Page 4, lines 8-9, “The cap file also maintains the necessary relocation information in fixup tables.”; Page 4, lines 12-13, “The fixup table again contains the position in the text or data section where a relocation has to take place.”).

Baentsch does not explicitly disclose; however, Swetland discloses:

- *a memory unit including executable software* (see at least Figure 7, reference number 750; Paragraph 0046, “The external memory may be used to store programs...”);
- *a plurality of class files stored in the memory unit* (see at least Paragraph 0049, “...microprograms and portal data are transmitted from the portal server to the external memory of the portal device..”; “The microprograms in one embodiment are comprised of compact, interpreted instructions known as ‘bytecodes,’ ...”; Paragraph 0077, “As described above, in one embodiment, the bytecodes may be Java bytecodes/applets.”; Paragraph 0083, “...each of the class files used in a particular application program...are combined to form a unified programming object referred to herein as a ‘bundle’. For the purpose of illustration, the particular bundle...is constructed from the class files.”);
- *a computing unit connected to the memory unit* (see at least Figure 7, reference number 710; Paragraph 0047, “The microcontroller of one embodiment is comprised of a central processing unit (“CPU”), a read only memory (“ROM”), and a scratchpad RAM. The ROM is further comprised of an interpreter module and a toolbox module”);
- *the computing unit being able to execute a Java Virtual Machine* (see at least Paragraph 0075, “...the interpreter module on the portal device is a Java virtual machine.”);

Art Unit: 2193

- *a constant pool created by combining constant pool entries from two or more of the plurality of class files without duplication of entries* (see at least Paragraph 0083, “...each of the class files used in a particular application program...are combined to form a unified programming object referred to herein as a ‘bundle’. For the purpose of illustration, the particular bundle...is constructed from the class files. More specifically, the redundant [method] entries are combined into a single, ‘global’ [method] entry in a shared constant pool within the bundle.” By combining the redundant entries into a unified method, there is no duplication of entries.); and
- *a byte codes and information structure created by combining byte codes and information structure entries from the two or more of the plurality of class files* (see at least Figure 2; Paragraph 0084, “The methods and fields from the original class fields are copied to the bundle as well along with various other class file objects (not shown).” Applicant regards “byte codes and information structure” as the “class properties, the methods, fields and attributes of the class, and their types” (Paragraph 0013). The constant pool contains references to these byte codes and information structures. Therefore, if the constant pool entities have been combined into the bundle, the methods, fields, and attributes are copied into the bundle as well.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate Swetland’s, memory and computing units and process of merging the constant pools and class structures of related methods, into Baentsch’s,

Art Unit: 2193

fixup table. The modification would be obvious because one of ordinary skill in the art would be motivated to "[reduce] the memory requirements for object-oriented programs" (Swetland, Paragraph 0011), "considering the fact that a program may utilize scores of class files" (Swetland, Paragraph 0010). By merging the constant pools and class structures of related methods, the memory requirements for programs will be reduced since there can be an enormous number of class files, and hence methods, in a program. Baentsch's fixup table allows for "runtime efficient linking in resource constraint Java runtime environments" (Baentsch, Page 1: 26-27). Applicant's cod file is a compressed class file, and Baentsch's cap file is a package file that contains classes and interfaces. Both files contain class information and for the purposes of combining class information and one of ordinary skill in the art would view these as comparable file types.

As per **Claim 2**, the rejection of **Claim 1** is incorporated; and Baentsch further discloses:

- *wherein the information in the fixup table comprises the location of data needed for resolving a symbolic reference in the given generated file* (see at least Page 4, lines 12-13, "The fixup table again contains the position in the text or data section where a relocation has to take place."; lines 22-24, "...references to other external packages should not be linked by precalculated offsets. Instead, a name or identifier should be used for references to other packages during the link process.").

As per **Claim 3**, the rejection of **Claim 1** is incorporated; and Baentsch further discloses:

Art Unit: 2193

- *wherein cross-references between the sibling files in the common sibling group are indicated using hard offsets* (see at least Page 4, lines 12-14, “The fixup table...contains the position in the text or data section where a relocation has to take place. In the simple case, these places are also relocated by a precalculated offset into trusted and well known target packages.”)
- *and references to files that are not part of the common sibling group are indicated using symbolic references* (see at least Page 4, lines 22-24, “...references to other external packages should not be linked by precalculated offsets. Instead, a name or identifier should be used for references to other packages during the link process.” These references made to external packages can include methods.)

Baentsch does not explicitly disclose; however, Swetland discloses:

- *wherein there are at least two generated files defined as sibling files in a common sibling group, each of the sibling files comprising a sibling list for listing other sibling files in the common sibling group* (see at least Figure 12; Paragraph 0083, “...each of the class files used in a particular application program...are combined to form a unified programming object referred to herein as a ‘bundle’. For the purpose of illustration, the particular bundle...is constructed from the class files.” Related class files are combined to form a bundle, which one of ordinary skill in the art would view as a sibling group.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate Swetland’s bundled class files into Baentsch’s fixup table containing references to the related files. The modification would be obvious

Art Unit: 2193

because one of ordinary skill in the art would be motivated to group related class files to form a unified class structure in a medium that limits the size of an individual file by having multiple smaller related files as opposed to a single larger combined file.

As per **Claim 4**, the rejection of **Claim 1** is incorporated; and Baentsch further discloses:

- *wherein for the given generated file, the byte codes and information structure comprises a second hard offset for cross-referencing a method included in the given generated file that was previously symbolically referenced (see at least Page 4, lines 12-14, “The fixup table...contains the position in the text or data section where a relocation has to take place. In the simple case, these places are also relocated by a precalculated offset into trusted and well known target packages.”).*

As per **Claim 5**, the rejection of **Claim 3** is incorporated; and Baentsch further discloses:

- *wherein at least one of the hard offsets does not need to be resolved or put into context by the Java Virtual Machine at link time (see at least Page 4, lines 12-14, “In the simple case, these places are also relocated by a precalculated offset into trusted and well known target packages.”; Page 5, lines 26-27, “The offset of this field can then be precalculated by the converter and need not be linked during the load process.”)*

As per **Claim 19**, the rejection of **Claim 3** is incorporated; and Baentsch further discloses:

Art Unit: 2193

- *wherein the information in the fixup table [of a given sibling files] comprises the location of data [of a cross-referenced sibling file] to place one of the hard offsets [that corresponds to the cross-referenced sibling file] into context at link time* (see at least Page 4, lines 8-9, “The cap file also maintains the necessary relocation information in fixup tables.”; lines 12-14, “The fixup table...contains the position in the text or data section where a relocation has to take place. In the simple case, these places are also relocated by a precalculated offset into trusted and well known target packages.”; lines 16-17, “The offset into the target package can be kept...in the fixup table...”).

Baentsch does not explicitly disclose; however, Swetland discloses:

- the sibling files in which the above mentioned fixup table may be used (see at least Figure 12; Paragraph 0083, “...each of the class files used in a particular application program...are combined to form a unified programming object referred to herein as a ‘bundle’. For the purpose of illustration, the particular bundle...is constructed from the class files.” Related class files are combined to form a bundle, which one of ordinary skill in the art would view as a sibling group.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate Swetland’s bundled class files into Baentsch’s fixup table containing references to the related files. The modification would be obvious because one of ordinary skill in the art would be motivated to group related class files to

Art Unit: 2193

form a unified class structure in a medium that limits the size of an individual file by having multiple smaller related files as opposed to a single larger combined file.

Regarding **Claims 7-11, 13-17 and 20-21**, the scope of the instant claims does not differ substantially from that of Claims 1-5 and 19. Accordingly, Claims 7 and 13 are rejected for the same reasons as set forth in the rejection of Claim 1; Claims 8 and 14 are rejected for the same reasons as set forth in the rejection of Claim 2; Claims 9 and 15 are rejected for the same reasons as set forth in the rejection of Claim 3; Claims 10 and 16 are rejected for the same reasons as set forth in the rejection of Claim 4; Claims 11 and 17 are rejected for the same reasons as set forth in the rejection of Claim 5; and Claims 20 and 21 are rejected for the same reasons as set forth in the rejection of Claim 19.

Response to Arguments

13. Rejection of claims under §103(a):

Applicant's arguments filed February 2, 2009 have been fully considered but they are not persuasive. Applicant asserts that there is no clear motivation to combine Baentsch and Swetland, and even if the two references were combined a person would need inventive ability to arrive at the claimed invention. Applicant also states that Baentsch does not teach using the generated files with devices having memories with limited storage capacity, however Baentsch does state that “[t]he present invention concerns dynamic code down load and linking in resource constraint Java runtime environments, such as in JavaCards for example.” In response to applicant's arguments against the references individually, one cannot show nonobviousness by

Art Unit: 2193

attacking references individually where the rejections are based on combinations of references.

See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Swetland acknowledges that referencing and relocating of the methods takes place (see Paragraph 0085). Baentsch's fixup table provides a structure for this relocation information (see Page 4, lines 8-9).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

It is noted that any citation(s) to specific pages, columns, lines, or figures in the prior art references and any interpretation of the references should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. See MPEP 2123.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the examiner should be directed to Kimberly

Art Unit: 2193

Jordan whose telephone number is 571-270-5481. The examiner can normally be reached on Monday-Friday 9:30am-5pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis Bullock can be reached on 571-272-3759.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Jordan

May 13, 2009

/K.J./

Examiner, Art Unit 2193

/Lewis A. Bullock, Jr./

Supervisory Patent Examiner, Art Unit 2193